

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appl. No. 10/695,802

REMARKS

Review and reconsideration on the merits are requested.

A telephone interview is requested concerning this application. The Examiner is respectfully requested to contact the undersigned at the later given local telephone exchange.

First, Applicants affirm their election without traverse of claims 1-5, 7-13 and 18-20.

Applicants now treat the rejection of substance beginning with paragraph 8 of the Action.

With respect to Paragraph 8, Applicants avoid the rejection over Takahashi U.S. 2004/0018361A1 by filing herewith a statement of common ownership. Takahashi '361 correctly should have been assigned to the assignee of the present application. Attached is a corrected assignment.

STATEMENT OF COMMON OWNERSHIP

Application No. 10/695,802 and U.S. 2004/0018361A1, at the time the invention of Application 10/695,802 was made, owned by the Tosoh Corporation.

Withdrawal is requested.

Paragraph 9

Applicants combine claims 1 and 2, claim 2 not being rejected, thereby avoiding the rejection over U.S. 2003/0091835A1 Takahashi et al. Applicants could avoid the 102(e) rejection by filing a statement of common ownership, but could not avoid the 102(a) rejection by such a statement.

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Paragraph 11

Claims 1-5, 7-13 and 18-20 are provisionally rejection on grounds of obviousness-type double patenting over claims 1-3 of copending Appln. No. 10/405,226. With respect to the **PROVISIONAL** obviousness-type double patenting rejection over copending Appln. No. 10/405,226, since the rejection is only provisional, Applicants do not comment thereon other than to note that in accordance with the present invention, island projections are formed on the flat substrate or a surface smoothened by a undercoat layer, and each projection is basically isolated like an island, although some projections may be overlap. In distinction, the invention of Appln. No. 10/405,226 is directed to a quartz thermal spray film comprising a continuous film. Should the rejection become "non-provisional", Applicants will again address the rejection.

Paragraph 12

Claims 1, 7-13 and 18-20 are provisionally rejected on grounds of obviousness-type double patenting over claims 1-10 of copending Appln. No. 10/289,402.

Since this rejection is merely provisionally, Applicants offer only a few comments thereon. The present invention has been above explained.

The invention of the '402 application is directed to a sprayed film comprising a continuous film formed by overlapping collapsed straps as shown in Fig. 11. Thus, the inventions are quite distinct.

Should the "provisional" rejection become "non-provisional", Applicants will again address this matter.

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The prior art: U.S. 6,150,006 Hellmann et al (Hellmann); JP-A 04-268064 Takashi et al (Takashi).

Paragraph 13

Claims 1-5, 7-13 and 18-20, all claims under examination, are rejected as obvious over Hellmann in view of Takashi.

The rejection of these claims, in light of the amendments to the claims herein, is respectfully traversed.

Hellmann discloses a quartz glass component. The Hellmann component has a rough surface suitable for the adhesion of CVD layers. In distinction, a major object of the present invention is to provide a part which does not generate dust and has high ability to keep adherents deposited thereon. Thus, the technical approaches between the present invention and Hellmann are quite different.

Applicants now present a detailed comparison between the claimed invention and Hellmann.

First, the present invention is directed to forming projections on the surface of a substrate or a surface of a glass thermally sprayed film formed on the substrate. In distinction, Hellmann is directed to forming roughness on a surface of a quartz glass substrate by etching the surface thereof.

Second, the projections formed on the substrate in accordance with the present invention are island projections, and they **do not have any sharp edge** at which a plasma field could concentrate to selectively etch the same, thereby forming particles. Specifically, the island

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projections are spherical, partly spherical, semi-spherical, bell-shaped or mountain-shaped or are in the form of a mixture of two or more of such shapes. In distinction, referring to, for example, Fig. 1 of Hellmann, quite clearly the possibility exists that an electrical field can concentrate on etched portions of "substantially flat top surface 4" or angular portions of "individual step element 7" in "elevation 1", even if the angles might not be acute or sharp angles.

In the Action, the Examiner states at page 8:

"A thermal sprayed coating that has the dimensions of Helmann et al is taken as meeting the instant claim language of roundish projections."

Applicants must respectfully disagree with the Examiner's characterization of Helmann, and submit that claim 1 distinguishes Helmann.

However, Applicants add new claim 22, which is an independent claim, emphasizing that the island projections are roundish as a whole and do not have any sharp edges. Quite clearly this aspect of the present invention is no where suggested in Helmann.

Further, claims 21 and 23 are added which recite that at least some island projections do not overlap with each other, whereby a portion of the substrate is exposed and at least some of the individual island projections. This aspect of the present invention is nowhere suggested in Helmann.

If the Examiner finds claim 1 not to be allowable but would find claims 21, 22 or 23 to be allowable, the Examiner is requested to contact the undersigned.

For the Examiner's reference, Photographs 1 and 2 are attached. Photograph 1 is a SEM showing the surface state of quartz glass having sharp edges formed on the surface by blasting a

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general quartz glass and then wet etching the glass with hydrofluoric acid. Photograph 2 is a SEM showing the surface state of quartz glass after further subjecting the above-treated quartz glass with plasma etching using CF_4 gas. It is believe quite clear from these photographs that the plasma field is seen to concentrate around sharp edges and, as a result, the surface might be viewed as "shaved". This is the cause of particle generation.

The projections in accordance with the present invention are basically island projections (there is the case, of course, of partial overlapping), and the substrate surface or glass thermally sprayed film surface is exposed between the projections. In distinction, "groove 8" between "elevation 1" as shown in Fig. 1 of Hellmann is formed by etching a quartz glass substrate. Thus, the present invention does not have "grooves" as are needed in Hellmann.

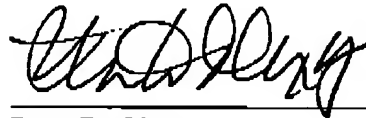
The rejection is, of course, a combination rejection. Despite the fatal defects of Hellmann, Applicants now turn to Takashi. Takashi discloses a sputtering device. Particularly, the sputtering device of Takashi has the following characteristics. An adhesion-proof plate for preventing dust generation and a shutter for shielding sputtering atoms used in pre-sputtering are formed of a member (Mo or Ta) having a low coefficient of thermal expansion and high mechanical strength. A surface of the member is thermally spray coated with a material (Al or Si_3N_4) having high film adhering strength to a sputtered film. With respect to the thermal spray coating of Takashi, Takashi discloses a method of forming a spray coated film (continuous film) on the entire surface of the adhesion-proved plate and the entire surface of the shutter. Takashi contains no disclosure in any fashion of island projections as in the present invention.

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Applicants respectfully submit that the combination of Hellmann and Takashi does not render the claims herein obvious, and request withdrawal of the rejection.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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